Chapter 5

Discussion and Conclusions

This chapter summarizes the thesis, discusses its findings and contributions. It also points out the limitations of the current study, and finally it outlines directions for the future research. The chapter is divided into seven sections. Section 5.1 discusses the correlation with previous research. Section 5.2 is a summary of research and discussion, and followed by the findings. Section 5.3 is a discussion on limitations of the current study. Section 5.4 is discussion on the implications of the findings. Section 5.5 proposed a few recommendations for the future scope of work. Section 5.6 converse the outline of contributions in the field of Indian manuscriptology. Section 5.7 are autobiographical reflections of the work, and finally the section 5.8 brings out the final conclusion.

This study was intended to find out the design aspects employed in the handwritten seventeenth century Devanagari Brahmanical manuscripts. The focus of the research was in the area of layout and composition design, and schematic structure of page layouts. It also highlights traditional Indian concepts of aesthetics and functionality while producing Devanagari Brahmanical manuscripts prior to the printing technology.

This thesis had the aim of exploring the seventeenth century Devanagari Brahmanical manuscripts accessible in Maharashtra in the following areas:

- To investigate distinctive systems, styles, and patterns in manuscript designs
- To identify the reason for following the minimalistic and simplistic approaches to design
- To discover the practices of various editorial styles as per the requirement of content
- To uncover the design principles employed in it
- To explore influence of other cultural designs on it
5.1 Correlation with the Previous Research

The review of literature revealed that most of the literature available for the study of manuscripts in India covered areas such as manuscript collection centers, cataloging methods, traditional and modern methods of preservation and conservation of manuscripts, microfilming, computerization, historical background of manuscripts, materials and tools used for writing, textual criticism, and paleographic studies.

The literary evidence of two words ‘Rachana’ and ‘Kalpa’, which are introduced in the Vedic literature ‘Brahma Sutras’ and the ‘Rigveda’ do support that since ancient times Indians were aware of the concept of systematic, organized order of construction as well as composition i.e. process of design.

The review demonstrated overall design trends of the manuscripts forms depending upon their sizes and the use e.g. Kacchapi, Musti, Chedapati, Gutka, Pustika, Panavali etc.

The literature review indicates traditional Indian structure known as 'anubandha chatushtaya' applied in the text composition along with various rhetorical meters e.g. Gayatri, Anushtupa, etc. Indian manuscripts designers followed a writing structure that includes various parts of the manuscript e.g. preamble, chapters, and colophon, etc. Colophon gives detail information regarding the name of the author, scribe, period, reason of writing manuscript, dynasty, dedication, laudation, etc. Various types of pushpika or colophon were found to have in use to inform the readers at the closing part of the canto, chapters and of the text.

One of the greatest distinctions between the Roman and the Devanagari scripts is that while drawing the grid for writing the text, in the case of Roman script, baseline grid is used whereas headline grid is practiced in the Devanagari script. Various types of tools were available to design manuscripts. Use of ‘Rekhapati’ is a clear evidence for the use of a tool to draw headline grid for writing text in a systematic way. The text is written using independent letter and there were no words.

Literature written during the seventeenth century specifies the rules of writing. It suggests that a scribe should write text in a symmetrical, equal, compact and well-defined manner with suitable measurement. A practical approach is represented by
suggesting writing in straight line with proper spacing between each letter to avoid overlapping and reading letters easily.

In palm leaf manuscripts, the text area is usually divided into two to three columns. However, the text continuity is seen horizontally in the same line. The most recent study suggests that the Indian practice grid in the socio-religion related art, e.g. in rangoli patterns to show hierarchy among various visual elements.

A review further indicates that three types of page composition styles were followed for manuscript layouts. They are: (i) simple text, (ii) combining more than two documents together and, (iii) composite text along with different editorial styles such as tripatha, panchapatha, mula (main text) followed by text, etc.

The literature review also explored that the manuscripts comprised of structure e.g. margins, headline grids, and navigation system i.e. abbreviated or full running title, section number or heading, page no. etc. in marginalia.

These findings are broadly in tune with those of previous researches, such as the standardization and codification of colour. The black ink was used for writing pothi or manuscript, whereas red ink used in the margin border and for the decoration purpose. Red ink was also used for rubricating text, punctuation marks (danda), salutation text, verse number, colophon, end of the stanza, end of canto / chapter, etc.; yellow ink to show corrections and deletion; gold and silver to draw borders and decorative work.

These findings are consistent with previous research. The text content is seen supported by diagrams in the manuscripts related to mathematics, astronomy, etc. Tripathi observed that although in paper manuscripts perforations did not found place because of fragile nature; the place was kept either empty or decorated in Jaina manuscripts, and it is not found in any of the Brahmanical manuscripts (Bibliothèque nationale et universitaire de Strasbourg, Catalogue of the Jaina Manuscripts at Strasbourg; Volume 4 of Indologia Berolinensis, 1975, p. 25).

Overall, there is a lack of case studies focusing on the seventeenth century Devanagari Brahmanical manuscripts. Previous research on Indian manuscriptlogy is found conducted in the diversified areas. No research has so far been undertaken into account graphic design practices in India prior to the introduction of the printing technology.
5.2 Summary of Research

This section intends to outline the thematic content analysis of this explorative research work, as discussed in the previous data analysis chapter (Chapter IV). The findings on the three major themes qualitative analysis are furnished below.

5.2.1 Form and Function of the Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Publication Design

The experiments were conducted to explore structural page layout formats of the manuscripts, and the elements continued and practiced in the modern publication design revealed following results.

5.2.1 (a) Page Formats

The statistics of the data collected related to the page formats and sizes of the seventeenth century Devanagari Brahmanical manuscripts indicates that the most preferred page format practiced for writing manuscripts was landscape, and a very few were in vertical formats. The manuscripts sizes vary depending upon their functional and utility type. The manuscript which can be held in the fist of the reader called as Musht; Gutka is a small size center stitched manuscript; Pustika is a larger size manuscript; and Potho with many folios, etc.

No standardization of paper sizes was discovered in the seventeenth century Devanagari Brahmanical manuscripts as it is seen in modern publication design practices, e.g. ISO standard paper sizes. However, the dimensions of the particular type of manuscripts were almost close to the each other e.g. mushti, gutka, pustika, etc.

In modern publication designs, three types of page formats are in practice and they are portrait, landscape, and square. Books are available today in a variety of sizes, from small pocket size books to big coffee table books, as per their functional requirement.

5.2.1 (b) Page Turning System, Text Flow Direction

The findings of this study suggests that the ergonomic sitting posture during the seventeenth century India influenced to a large extent on the reading pattern of the manuscript. The traditional style or ergonomic posture for reading was sitting on the floor with crossed or folded legs with the manuscript kept in front for reading. This reading habit has influenced the page turning system as well as the ergonomic
convenience in handling folio. This arrangement has affected in formulating the visual
design of folios, mainly in the area of the text flow direction and the orientation of the
text on the front and backside of the folio.

The experiment has been conducted to understand the page turning system for the ‘top’
as well as for the ‘left side’ bounded books and their association with the text flow
directions. The results revealed similarities between the seventeenth century Devanagari
Brahmanical manuscripts and modern books in terms of page-turning, text flow, and the
eye movement in context with the single column text. These types of page turning
systems support the reading at ease as well as with uninterrupted text flow.

5.2.1 (c) Page Imposition and Binding System

Basic level of page imposition system is observed, in the seventeenth century
Devanagari Brahmanical manuscripts. Two type of page imposition system evident to
make the signature of the sheet, and they are:
1) Single folio with one page in each side of the page
2) Two folios and four pages per sheet. It is formed by making a single fold and
placing two pages on each side of the sheet.

However, in a modern publication design, the number of pages arranged on front and
backside of the sheet depends upon the (trim) size of the book. It also depends upon the
maximum printing size of the offset printing machine. Nowadays, digital technology
plays important role in the advancement of page imposition technique with the support
of the software.

The major difference is observed in the binding systems of the seventeenth century
Devanagari Brahmanical manuscripts and the modern books. For example, in modern
books, the pages are bound together with the various type of binding techniques,
whereas in the case of manuscripts, it is a bunch of loose sheets of folios wrapped up in
a cloth tied with a string. Folios are found separate and not stitched or bound together
with a thread, or glue.

Differences are also noticed while considering the stacking arrangement of books in the
shelves. The modern stacking arrangement of the books in the shelves, project only the
spine area to the reader. The spine area with the printed publication details plays a very
important role while locating the particular book. The binding system preferred in the
seventeenth century does not provide any scope for the spine area, and hence lack in the effectiveness and efficiency in the binding system.

These finding suggests that the Devanagari Brahmanical manuscript designers of the seventeenth century followed rudimentary method for binding books. On the other hand, modern graphic designers, who are gifted with the new technology, applied various bookbinding methods (simple to complex) as per the functional and aesthetic demand of the job.

5.2.2 Composition and Layout Design: Page Structure, Typography, and Graphic Strategies

With the aid of visual deconstruction method, the elements dependable for composition and layout of the seventeenth century Devanagari Brahmanical manuscripts identified and compared their design aspects with the modern book design principles.

The study explored the organization of the content on a page by employing various strategies in structuring of page anatomy, grid system, typographic palette and various graphic strategies in the seventeenth century Devanagari Brahmanical manuscripts. It revealed information in the areas such as the page anatomy, distinct styles, patterns and simplicity factor and the minimalistic approach towards designing the manuscripts.

5.2.2 (a) Page Anatomy and Structural Components

Basic structural components of the page comprises margins, text blocks, heading / baseline grid, page navigation system, space planning for the visuals. They are found complimentary in the seventeenth century Devanagari Brahmanical manuscripts and the modern publication designs.

The seventeenth century Devanagari Brahmanical manuscript page layout found deficient in the multiple columns, symmetrical and asymmetrical column arrangements with gutter space and double spread recto / verso type mirror image page layouts as commonly practiced in the modern publication designs.

5.2.2 (b) Grid System

Template design process as noted in the seventeenth century Devanagari Brahmanical manuscripts is a clear indication of the design project-initiation process. Similarities are found in the template making process with the modern publication design process.
Project initiation process involves research, and exploring, developing and refining ideas for final page layout. It also includes selection of appropriate page size, format of the page, size of page, construction of grid and typographic style and attributes.

Four types of grid construction methods have been traced in the seventeenth century Devanagari Brahmanical manuscripts. A formal balance is achieved by employing following grid structures in page layouts of the seventeenth century Devanagari Brahmanical manuscripts.

1. The most accepted grid construction system in the seventeenth century Devanagari Brahmanical manuscripts is similar to the modular grid structure found in the modern publication design. It is a very simple, yet the effective system for the division of space for defining margin and the text block area. In this process, space is divided into equal horizontal and vertical parts resulting into rectangular modules or units. The one unit space at the edge of the page is distinctly left blank at the margin area and the inside area as a text block. These unit borders are also worked as guidelines to draw margin lines, i.e. *hasia* lines. Further, depending upon the text size and height, the text block is divided into equidistant horizontal lines as headline grid. Using unit places, the image area is determined. Positions for page navigation are considered to put running title and folio number. Similar kind of grid construction system is observed in one of the representative modern publication design. The only difference noticed in the page layout of modern publication design is that it does not include borderlines, as they are one of the prominent factors of manuscript page layout.

2. The *pothi* kind of page layout, which is a ‘horizontal - single column page layout’ with the headline grid and the page navigation system, found arranged in a peculiar style. It is the most admired format, which remarkably continued for the designing of religious Brahmanical modern books.

3. A modified version of the *tripatha* style grid structure is spotted in the modern publication designs. In a *tripatha* style, the main text is written in the vertical center of the page, and the commentary is written in the sections above and below. Hierarchical grid structure in the modern publication design has a similar type of structure with a modest difference is that instead of placing commentary above and below the main text, it is placed only below the main text.
4. A grid structure is based on the linguistic rhetorical composition patterns, which assisted manuscript designers to plan a page layout in units formed by headline grid. This type of grid structure is frequently available in the modern publication page layouts.

It is observed that once a grid structure was planned subsequently it was followed in the entire manuscript folios. Apart from the grid structures mentioned above, other types of grid structures are not found in the representative Devanagari Brahmanical manuscripts studied from the seventeenth century.

However, the dynamic page layout design by employing a variety of patterns and formats to construct grid structure is observed in the modern publications design. Few to mention here are page layouts with single, multicolumn, modular, mix, hierarchical, golden ratio with symmetrical and asymmetrical layouts, etc. Simple to complex patterns of grid structures are recorded in the most advanced form in the modern publication designs.

5.2.2 (c) Typographic Palette: Type Style and Paragraph Alignments

- Findings revealed that the seventeenth century Devanagari Brahmanical manuscripts were written in three different styles, e.g. (i) majorly in daily handwritten, (ii) beautiful mono-linear handwritten (same size thickness of strokes), and (iii) in calligraphic style with thin and thick strokes in a controlled manner. In a few representative examples, a fluid calligraphy with extended cursive terminals and vowel symbols are visible.

- Justified type of alignment is the most preferred option opted by all manuscript designers for writing text. Only the last line of the text varies with the left, or center type of text alignment. Manuscript designers have elegantly applied indented paragraphs to distinguish main text from the commentary in ‘tripatha’ type of grid construction. Drop line type of text alignments are also noticed in late seventeenth century Devanagari Brahmanical manuscripts.

- The text forms are readable and legible. The gray value or the tonal value of the text encompasses the light, medium and bold styles.

- In most of the cases, the form of text, type styles and other typographic attributes are found consistent throughout the manuscripts. However, in a few cases, it is found that consistency was not maintained in the form of text.
• A large amount of manuscripts is written with no variation in typographic features. In a few manuscripts the variations in type size are observed. For example, in bilingual commentary type manuscripts, the main text is written with the big type size and in bold letters than the commentary.

• The range of characters per line found is a 24-58 character and the range of lines per text block noticed 12-17 lines.

• Only one type of text alignment i.e. justified type is applied for the text. It is found that if there was a shortage of the text for achieving justified alignment in the last line of the text then certain standardized symbols were added in the line to fulfill the requirement of text justification. In a few cases, the variations in the last line of the paragraph are observed with the left and centered alignment. Drop line type of alignment is rarely noticed in the later period of the seventeenth century.

• Left and right indentation of the text is common in the ‘tripatha’ type of grid structure.

Applying typography is the key factor in the modern publication designs. There are plenty of digital fonts available and designers have to choose assorted, relevant font and their attributes for their artwork. The study revealed that the text is always used with variation in the types size, styles, etc. It is evident especially in the area of the headings, subheading, body copy, captions, etc. The purpose behind the change in the size of type is to achieve visual hierarchy in the design and to make page layout interesting by attention seeking catchy headlines. These types of composition strategies add rhythm and dynamic effect in the page layouts.

Primarily all four types of alignments i.e. left, right, center and justified types regularly applied for paragraphs noticed in the modern publication design page layouts. Alignments are used in combination and with indents. In text-heavy paragraphs, it is observed that the paragraph alignment is justified, however, the reading pattern of Indian origin scripts has influenced to keep the last line of the paragraph left aligned.

5.2.2 (d) Graphics Strategies

The scrutinization of the representative sample resulted in knowing that the effect of the technology and ease in acquiring content are influenced in liberal use visuals in modern publication design, however, in the seventeenth century Devanagari Brahmanical manuscripts illustrations are planned very carefully in page layouts.
Prominent features of the graphic strategies which are documented from the seventeenth century Devanagari Brahmanical manuscripts, precisely stated as under:

- The use of the limited text supportive graphics such as illustrations, tables, charts observed in the page layouts.

- Apart from the line justification symbols added at the end of the line, no extra illumination or decoration, patterns, motifs, etc. found in the page layouts.

- A few cover pages are found decorated with a line or floral patterns.

Application of graphics distinctively noticed in both the seventeenth century Devanagari Brahmanical manuscripts and in the modern publication designs on the front and the back cover designs, section separators, within chapter page, etc. A rare example is also noticeable in manuscripts i.e. pattern of illustrations in the background of the text. A similar type of image or pattern filled backgrounds are practiced in modern publication designs.

Basic similarities are observed in the space organization of visuals within the page layout of the seventeenth century Devanagari Brahmanical manuscripts and modern publication design. The grid structure is created in order to design a template used as the foundation for the space organization for visuals. Modular unit spaces in the case of the manuscripts and columns in the case of modern publication designs were utilized for placing visuals.

The major difference found between two are: the use of columns in the modern publication design with gutter space mainly worked as a padding white space between the visuals and text. It also provide tidy look to the design, creates a visual grouping, and gives rest to the eyes of the reader. However, in the case of manuscripts lack of gutter space between the columns resulted in the overlapping of text and visual borders resulting in chaotic, untidy and unorganized page layouts. This case is observed in the page layouts where visuals are painted with one or two colour borders around. This situation did not arise for those visuals that do not have borders. Full-size visuals rarely traced in the case of manuscripts but commonly practiced in the modern publication designs. Separate captions for visuals unknown in the manuscripts but often found for images in modern publication designs as crisp information besides the visual.
5.2.3 Layout Styles and Fundamentals of Page Layout Principles

Aesthetic elements in the composition of page layouts of the seventeenth century Devanagari Brahmanical manuscripts studied in this theme to understand the organization of information, various types of editorial styles, application of design principles in the composition of page layout, and influence of other contemporary design school on the style of manuscript page designs. Results are compared with the modern graphic design principles.

5.2.3 Part A: Organization of Information in the Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Books

5.2.3 Part A (1) Segments of the Seventeenth Century Devanagari Brahmanical Manuscripts and Modern Books

The careful inspection of the manuscripts revealed information placed within every manuscript, and the modern publication design can be categorized under different sections or parts of the document. While scrutinizing the representative manuscripts and compared with the modern book design, subsequently the following parts are noticed common in both: front and back cover pages, section separators for beginning and end of chapters.

Dissimilarities have also been noticed in the presentation of information under various segments in both the cases.

- Every manuscript has followed a particular structure to present information such as salutation to god or teachers. A peculiar rhetoric structural, a standardized style known as ‘anubandha chatushtya’ is employed in the manuscripts to explain the type of reader of the particular text, the purpose of the text, its subject, and its relation to various disciplines. The text is written in a horizontal continuous manner in case of most of the manuscripts. The paucity of material i.e. paper, probably was the reason behind it. However, various physical segments e.g. cover page, copyright page, dedication page, full title page, foreword, preface, acknowledgment, introduction page, table of content, index page, section separator etc. were presented in a specific order and on mostly printed on separate pages in modern publication designs.

- The purpose of the front and back cover pages in the seventeenth century Devanagari Brahmanical manuscripts was either to display information regarding
Chapter 5: Discussion and Conclusion

the book title or beginning of the text. The back cover was not necessarily in practice during this period. However, in a few cases the back cover reveals information stating the end of a particular chapter or text.

- The practices of various types of colophon indicate a different type of information related to publication. For example, the publication information, end of chapter (of section) information and end of text information are found very much common in the seventeenth century Devanagari Brahmanical manuscripts.

- In the seventeenth century Devanagari Brahmanical manuscripts, the segmentation of sections mostly observed in continuation with the text, and occasionally text-oriented or illustrated section separators are introduced in the manuscripts. However, the pattern of information is almost similar in both the cases; the representation style found is distinctive.

5.2.3 Part A (2) Layout Editorial Style and Structure

Various editorial styles were employed in the seventeenth century Devanagari Brahmanical manuscripts depending on the single or bilingual text and orientation of page i.e. portrait and landscape.

Evidence do support that in every manuscript the design process began with the predefined editorial style with a definite form and size of the folio, grid construction, template design, and space management for the content organization.

For designing single text manuscripts with the landscape page formats, two types of editorial styles are noted in the representative manuscripts. In these manuscripts, the verses are written in a horizontal format.

- In the first style, the verses are not numbered but the section numbering is denoted in the text format in line with the other text. To distinguish the difference between the two type of information, extra space added before and after the ‘end of section’ verse.

- In the second editorial style, the rest of the layout design is similar to the first style, and the only difference is that verses are being numbered.

Both these editorial styles are accepted in the modern Brahmanical publication designs with few changes, e.g. change in typographic attributes for heading, body text.
For designing single text manuscripts with the portrait page formats, a unit based editorial styles are noted in the representative manuscripts.

- The editorial style employed in the portrait format of the seventeenth century manuscript page layouts is made of a headline grid - page layout structure. Units are formed from these headline grids which further utilized in the formation of text area, stanza numbering and for the extra space between two stanzas. This editorial style is also selected in the modern publication designs with a few adaptations, e.g. change in typographic attributes of heading and body text.

For designing bilingual manuscripts with the landscape page formats, two types of editorial styles have been observed in the representative manuscripts. These manuscripts include main text and its commentary in two different languages. However, the script is the same for both of them i.e. Devanagari.

1. In type 1 of bilingual editorial style, the text is written in a horizontal line. The textual indication has been provided at the beginning of the main text and commentary. Verse numbers placed after the main text and the commentary, assist a reader to know their current position in the manuscript. Verse number of a commentary is found occasionally matching with the verse number of the main text or else has different number.

2. In type 2 of bilingual editorial style, a ‘tripatha’ style of grid structure implemented for page layout and composition of elements. The main text, e.g. text in Sanskrit language is written in the vertical center of the page and the commentary in Marathi language, written above and below the main text. Commentary verse number found occasionally matching with the main text verse number.

In modern publication designs, three types of editorial styles predominantly noticed

1. (i) Publications related to Brahmanical single text are found composed in a horizontal manner. The verses are placed one after the other in the horizontal direction, and the verse number is positioned at the end of the verse in a line. This editorial layout style is the imitation of the seventeenth-century single-text landscape format type of layout. However, the only difference noticed in the modern publication design is the application of design principles e.g. contrast and proportion in the typographic style of heading. The headings found bigger in size and bolder than the body text, reflecting clear visual hierarchy.
(ii) Publications related to Brahmanical single text, composed in a portrait manner, have a parallel editorial style as noticed in the modular unit based editorial style. The editorial style that is practiced in the portrait page layout single text page layouts noted in the seventeenth century Devanagari Brahmanical manuscripts. The difference is noticed in the modern publication design in the areas such as typographic styles, application of contrast and proportion principle in the typographic style of heading. The headings found bigger in size and bolder than the body text, indicating clear visual hierarchy.

iii) Publication editorial style comprises multiple columns and rows. In such page layouts more than one articles related to one subject are placed on a single page.

2. The strategy employed in the bilingual modern publications is distinct from the seventeenth century Devanagari Brahmanical bilingual manuscripts. For example in modern editorial styles:
   i) Main text and commentary are arranged one beneath the other in vertical text flow format. The order of the text is ‘m-c-m-c’ i.e. main - commentary - main - commentary, with vertical text flow direction. Occasionally the main text and the commentary are assigned serial numbers. This editorial style is partially similar to ‘tripatha’ style of the seventeenth century Devanagari Brahmanical bilingual page editorial style.
   ii) Use of parallel columns to accommodate bilingual content (one language or script per column)
   iii) Utilization of page spreads (left and right) to place bilingual content. (one language or one script per page).

2. Appropriation in editorial styles — The same subject is presented with variety in layout whereas the format is imitated in all page layouts. This imitation of format is not just because of the aesthetic reason but also for the functional reason. Mainly, the process is presented in such type of page designs.

The findings of this study reveal the repetition of the page layout editorial styles of the seventeenth century Devanagari Brahmanical manuscripts and shows a close association with the ‘appropriation’ principle having practiced in modern publication design.
5.2.3 Part A (3): Page Navigation System

The folio numbers are traceable on only one side of the manuscripts. Similarities are noticed in the seventeenth century Devanagari Brahmanical manuscripts and modern publication designs’ page navigation system. Such as running titles and abbreviated running titles are found on almost all the manuscripts folios placed within the margin areas. In the case of horizontal format manuscripts, the page navigation system is arranged in the left and right margins of the page. However, in the case of vertical format, a page navigation system is placed in the top margin or the header area. These observations are close to the modern publication designs. However, accessing information within a book, using modern page navigation system is more systematic and easy. The page navigation system in modern publication design is more efficient than the seventeenth century Devanagari Brahmanical manuscripts. Because it encompasses table of content page and index entry section along with the use of regular running title and page numbers.

In all, the study suggests that the manuscripts show transitional page navigation system which incorporates not only full or abbreviated running titles and folio numbers placed in the margin area but also they included navigation system within the text area. A fewer examples can be quoted, such as verse number, stanza number, end of section number, end of chapter number, etc. These numbering systems within chapter and the folio numbers must have surely assisted the reader in marking and knowing their current position within the manuscript. Similarly, it must have guided for further continuation of reading even after few breaks in the reading. This page navigation system seen replicated in the modern Brahmanical landscape format page layouts, with certain modifications.

5.2.3 Part B: Layout Styles and Fundamentals of Page Layout Principles

5.2.3 Part B (1): Chapter Opening Pages — Entry Point

The study revealed that every manuscript begins with a ‘salutation to God’ or teacher. In most of the manuscripts, no variation is noticed between the size, colour, tonal between the entry point text and the rest of the text in the manuscript. However, a few techniques to highlight the entry area is observed. In one type the entry point text found highlighted with rubricating effect, and in another type the extra space has been added either before and after entry text or only after entry text area. These methods show
effective use of principles of design, such as emphasis effect, contrast in colour, and white space. Additions of white space also helped in achieve emphasis in the entry area of the page layout.

Big attractive, catchy headlines with the bold and colourful letters, single or colourful drop capitals, indented paragraphs, etc. are observed in the representative modern publications. These are few common features of the entry points of the articles in the modern publication designs. **Visual hierarchy** is achieved in the modern page layouts by employing typographical variations in various type of information using **contrast** in the size of text, tonal value, white space colour, etc. This approach leads the **readers’ eye movement** within the page layout guiding them the **order of reading**. Consistency is maintained for the defined category of information throughout the book.

The study also revealed that the most of the chapter-opening pages in the manuscripts found mainly stationary with few exceptional lively cases.

### 5.2.3 Part B (2): Design Principles and Page Layout

**Consistency:** One of the most important finding revealed that in most of the seventeenth century Devanagari Brahmanical manuscripts, majorly no variations is observed in the calligraphic attributes such as style, size, colour, tonal values, the spacing between the lines, etc., in the entire manuscript. This has resulted in achieving **typographic consistency** in page layout. Variations in type size and tonal value are noticed in the representative samples of the mid and late seventeenth century.

The findings of modern publication designs revealed that attentions seeking bold display types are chosen mainly in the headings, which are clearly visible from longer distance. They generate interest amongst the readers. The kickers and subheadings provide additional information about the articles; they are mostly bold and bigger in size than the body text. This variation in typographic attributes by adding contrast and proportion makes page layout interesting and dynamic. Design principles such as contrast, proportion, value works very well achieve effects e.g. visual hierarchy in the page layout.

**Colour, Emphasis, Contrast:** The findings of qualitative representative manuscript studies uncovered the limited and controlled application of colour in the text of manuscripts; and it is found relevant and appropriate. Two types of colour application are observed in the text area. Colour with transparency effect and solid colour are
employed in the page design to highlight or emphasize certain category of text, e.g. rubricating ‘salutation of God’, punctuation marks (*danda*), verse number, end of the section, etc. Adding contrast by applying colour in the text at some degree assisted the reader in knowing the current position in page very easily. Application of **colour** in the text area not only improved the **aesthetic** value but also enhanced the **functionality** of the manuscript. Standardization of yellow colour also noticed for deleting the text area in the manuscripts.

Simple to complex representative modern page layouts were scrutinized to study the application of design principles in modern publication designs. The observations revealed that **colour** element is used predominantly in the text areas of the modern publication designs. However, single colour i.e. black colour printed books are also available with variation in the text size. In such layouts, contrast and proportion in the size as well as in the tonal value deliberately employed to show levels of information. **Contrast** in type size is noticeable for heading and body text, resulting in achieving **visual hierarchy** in the layout. In two colour page layouts, generally heading and subheadings are in same colour, and the body text preferably in black. Thus, colour, contrast, and emphasis work as attention seeking elements. Various appropriate colour harmonies are also found considered while the selection of the colour in the page layout, sometimes colour chosen compliments with the images placed within the layout.

Consistency is maintained in the typographic attributes among the level of information. It is also observed in the graphic styles employed in the page layout.

**5.2.3 Part B (3): White Space**

White space is found actively employed in the seventeenth century Devanagari Brahmanical manuscripts to distinguish the difference between mixed types of information. It demonstrated visual grouping or as chunking of information.

The study to explore template-designing process in the manuscripts revealed that white space was defined during the template making level. The deconstruction of the grid structure of representative manuscripts validated making use of leading, i.e. the space between two successive lines planned while configuring the headline grid structure of the manuscript. It was also employed in various other areas, such as margins at the entry point area i.e. between ‘salutation to God’ and rest of the text, between two sections, end of the section, end of the verse. In ‘*tripatha*’ editorial style, a white space is
especially introduced to draw the attention towards the main text area. It is planned in the form of left and right indent space.

Digital deconstruction method has revealed the use of white space in the two representative manuscripts with the portrait format page layout; and the text arranged in the modular grid unit format. The extra space added in the predefined unit form in the vertical direction help in improving readability factor within a document.

In modern book designs, white space is used liberally. It is employed in the margins, between the title and first paragraph of the article by indenting the first line of the paragraphs. White space is also employed between paragraphs, two successive lines (leading), words, columns (gutter space), padding for images, for blocking title, etc. White space employed in the layout acts as a highlight, and at times it relaxes readers’ eyes.

5.2.3 Part B (4): Balance in the Page Layout

Application of principles of design such as visual hierarchy, contrast, proportion, colour, white space and strategy for the composition of the content in page layouts using grid structures play a vital role in bringing balance and rhythm in the page layouts. Thoughtful arrangement adds visual movement, and constructs cohesive unity among all elements in order to create balance and rhythm in the entire design.

In representative modern publication page layouts symmetrical as well as asymmetrical balance are noted. It is formed because of the distribution of content along the axis of the page and their respective alignment. However, the entire arrangement of the content including the fundamental of designs and application of colour, made it cohesive to form visual unity and harmony in the page layout.

5.3 Limitations of the Present Study

The major issue in this qualitative research was to select samples and determine the sample size. The manuscripts written in the seventeenth century are huge in numbers, around five lacks, as estimated by National Manuscript Mission, India (Indian Manuscripts: What is Manuscript, 2007). They are spread across the entire India including the state within it i.e. Maharashtra. The limitation of the study was that the researcher could not reach out to every manuscript because of the three reasons: The
first, geographical limitation; the second the manuscripts are in the collection of many repositories, institutions, and in the personal collection; and the third limitation of time and financial resources. Therefore, the scope of the study intentionally narrowed down in geographical aspect and chosen the region, Maharashtra. The researcher identified various categories that were required for the study of layout and compositional styles, and finally selected representative manuscripts for the study. While comparing these seventeenth century Devanagari Brahmanical manuscripts with the modern publication designs, a similar approach, as mentioned above was followed. In case of modern publications, various genres with functional, aesthetics, and utilitarian design with selective application of design principles are carefully selected for the research.

5.4 Implications of the Findings

This study intends to suggest evidence to understand various categories related to the publication design such as the form and function, page anatomy, page turning system, page imposition system, template design process, grid system, and page navigation system.

The study appears to support the arguments for the distinct system, editorial styles, and pattern for manuscript design. It provides evidence through exploring grid system, an organization of information, typographic palette, layout editorial styles for single and bilingual text, and the graphic strategies employed in the seventeenth century Devanagari Brahmanical manuscripts.

This study also substantiates the manuscript designer’s approach towards simplicity. They essentially focused on the content, e.g. the text and the use of minimalistic approach to other factors such as decoration and ornamentation. The evidence from composition and layout design theme as well as the graphic strategies employed by the archaic designers supports this argument.

This study would also like to suggest evidence for the application of design principles in the composition of page layouts by the manuscript designers by exploring page layouts on the grounds of design principles.
5.5 Recommendations

5.5.1 Future Research Scope:
In this study, there is ample scope to conduct similar kind of research in the other culture specific manuscripts of Indian origin or from a nearby region. For example Jaina, south Indian, Nepali, etc. can be taken up to understand the broader aspects of the page layout composition and design approach in the seventeenth century India.

5.5.2 Future Action/Policy:
The study demonstrates that the current culture specific Indian publication designs are the amalgamation of the old and new. However, there is a need to change the cultural design approach as the publication designers from China and Japan successfully implemented it. Graphic designers like Sugiura Kohei and Lu Jing-ren incorporated old Japanese and Chinese cultures and traditions in their book designs. It is recommended that the students of graphic design should be introduced the topic of history of design in Indian cultural context, and they should apply this knowledge to the contemporary design principles and produce exceptional culture specific publication designs.

5.6 Contribution to Research
This is a conscious attempt in undertaking the original research work with the totally new approach to the study Indian publication design history. This subject has not been explored yet, and has very limited published literature. This study has made a number of contributions in the field of history of graphic design in India. Firstly, the study contributed in the area of ‘grid structure’ and ‘template design’ process for seventeenth century Devanagari Brahmanical manuscripts. The use of various types of representative manuscripts for the study has enhanced the originality of the study. It has added altogether a new perspective in the study of Indian manuscripts. Therefore, the researcher hopes that the findings of the study will attract the history of design and graphic design fraternity’s attention to this perception. This investigation will also assist and guide the scholars working in the area of Indian manuscriptology.

5.7 Autobiographical reflection
Undertaking this research has been an invaluable experience, which helped the researcher grow personally and professionally. To elaborate further the researcher
Chapter 5: Discussion and Conclusion

developed personally by imbibing discipline, organization, time management etc. It has also added professional values that researcher started presenting her research work at the national and international conferences in the related field and finally published research findings. As an academician it has benefited her in understanding and upgrading the knowledge of the publication design, a specialized area of graphic design in depth. The pursuit of this study reflected in the teaching skills, techniques and methods with the new innovative approach. Ultimately, it reflected in guiding students in their degree projects more resourcefully. The outcome of this study is that the researcher has published three research papers. Out of which two are related to discussions on Indian medieval culture specific publication design aspect (Ranade P., Use of Eye Movement Tracking Technique in the Study of Layout and Composition Design of Indian Manuscrits), (Ranade P., Form and Page Turning Function of 17th century Devanagari Manuscripts of Maharashtra (India), 2015). The third research paper discusses the contemporary design process and use of cultural and traditional elements in the publication design (Ranade & Kaeosa-Nga, Design Education: Strategic Design Process and Publication Design on Thai Costume, 2016). All these research papers are subsequently read and downloaded by many national and international scholars. The feedback received from the academic scholars has added the zest in the pursuit of this research work.

5.8 Conclusions

The findings of this qualitative study and the evidences collected uncovered the following results related to the layout and composition, and the design process followed in the seventeenth century Devanagari Brahmanical manuscripts.

The critical analysis of the manuscripts strongly suggests that the design process practiced for producing the seventeenth century Devanagari Brahmanical manuscripts is similar to the design process of the modern publication design. The process involves following key areas: defining form, structure and size of the final product, page anatomy, page turning system, text flow directions, template design system using the grid structure, typographic palette, utilization of layout editorial styles for organization of information and content, graphic strategies in the layout, and implementation of design principles (Plan - Design - Develop - Distribute). These evidences support the hypothesis: a structure of manuscripts contains many elements, which are continued in modern publication design.
The analysis has revealed that maximum numbers of Devanagari Brahmanical manuscripts designed in the seventeenth century are in landscape page format, as they followed the conventional method. Very few manuscripts designed in the portrait format. Depending upon their sizes and function of the manuscripts they are classified and assigned nomenclatures, such as mushti, gutka, pustika, pothi, etc. However, modern publication designs are classified under their function and genres, e.g. magazine, novel, newspaper, text book, pocket size books, coffee table books; and their sizes are related to the genre.

The analysis also disclosed the general stages that followed in the manuscript template design process. The stages involve: selection of paper of required size, division of space in the modular grid format, define margin area, draw left and right border lines, construct the baseline grid depending upon the type size and required number of lines per page, structural positioning of the content on the page layout such as text, illustrations, and page navigation system, etc. The study also revealed the skillful arrangement of the structure of the page in the manuscripts. Appropriateness represented through the selection of specific types of editorial styles for single or multilingual manuscripts. The evidence of grid construction method also brought to light the geometrical nature of the manuscript. In all, the results of the qualitative analysis indicate the systematical approach and methodology employed in the design process with form, shape, visual conceptualization and aesthetic appeal with functionality in design. These results support the hypothesis in relation to the distinctive system, style, and pattern practiced in the seventeenth century Devanagari Brahmanical manuscripts. These evidence do support the hypothesis namely, many structural elements of manuscripts are continued in modern publication design.

Few observations need to be deliberately highlighted namely; a few manuscript designers opted for experimental page layouts in portrait format with breaking most of the rules practiced in contemporary tradition of manuscript design. (Shree Samarthakruta Yuddhakanda Prata by Sri Ramadasa Swami, ‘Kalyanpotha by Kalyanswami 17th Century AD). The effectiveness of these layouts lies in their content organization, navigation, and the presentation techniques. The key features of these manuscripts are: removal of hasia borders, the introduction of full-page illustration without page borderlines, followed the basic modular grid construction method to define one space margin area, and then effectively created units out of headline grid to place the textual content. Navigation system practice by adding stanza number, which is
written below the stanza, automatically created white space between two stanzas, and it worked as paragraph space as practiced in modern publication design. It formulated the chunks of paragraphs and visual grouping of elements on the page. Finally, the entire page is represented the coherent design.

The grid construction method is found employed so as to divide the page into the modular grid. This resulted in the distribution of space equally in horizontal modular and vertical modular units. These modular units have further utilized for the positioning of the page elements. These elements show totally different approach of grid construction and content organization and management from the trends and patterns accomplished by their contemporary Indian or other cultural traditions, e.g. Jaina, Islamic Hebrew, Roman, etc. (see appendix C). All the above evidence do support the argument that the seventeenth century Devanagari Brahmanical manuscripts does not show any influence of other contemporary design schools nor they accepted any other style in their design. These evidence also support the distinct system, style, and pattern in the Devanagari Brahmanical manuscript designs in the seventeenth century.

In the study related to the organization of information in the seventeenth century Devanagari Brahmanical manuscripts, it has been found that there was a systematic approach to organize the content of the manuscript into different parts. The content thus arranged in different parts occasionally show use of separate pages or in the continuation of the text. Every manuscript has physical parts such as front covers, infrequently back cover also. Section separators for the beginning and end of the chapters, introduction, generally three types of colophon (in the beginning of text, at the end of section or chapter and at the end of text), and numbering system for verses, stanzas and sections along with the page navigation system. A predetermined rhetoric style influenced for writing the introduction was ‘anubandha chatushtya’. It is a standardized system through which the reader has been provided introduction regarding; for whom this text is, the subject of the particular text, the purpose of writing, and its relation to various other disciplines. All these simple and functional rational design aspect support that the seventeenth century Devanagari Brahmanical manuscripts are not only geometrical in nature but also they are logical and effectively presented content in proper order.

One of the themes emerge from this analysis in the area of typography is that the manuscript designers have followed their contemporary design trend related to
typography. This theme is evident through literature review related to typographic approach (Pangarkar, 1990, p. 688), (Prasad, 2007; Satyendra, 1978, p. 85). Influence of the literature resulted in maintaining consistency in the typographic attributes with no variation in size, gray value, leading space, style, etc. in entire manuscript. In the later period, the manuscripts were written with variation in text size and contrast to show visual hierarchy, e.g. Bhagavad Geeta - Satikah (1696 AD) and Bhagavata Purana (1948 AD). The type styles employed in the manuscripts are readable, legible, and coherent.

A minimalistic approach, laser focus, and effectiveness are the keywords that support the graphics strategies employed in the seventeenth century Devanagari Brahmanical manuscripts. The manuscript designer was exposed to the various types of geometrical, artistic design patterns, motifs, etc. through their religious and social environment e.g. temple architecture, floor art (rangoli) patterns, etc. Still, they have chosen the minimalistic and simplistic approach in their page layout design. It is recorded in the study as careful and limited use graphics in the manuscripts. Application of graphics in page layout studied has revealed that it was dependent on the focused group for whom the manuscripts were designed. The manuscripts with old religious scriptures, e.g. Rigveda did not have visuals but diacritic marks for linguistic support. Simple line-art illustrations or inline tables or charts were introduced in the geometry and mathematics related manuscripts (Kundamartanda 1688 AD, PateeGaneeta, 1661 AD), and full page colourful visuals in the case of manuscripts with poetic, and mythological genres (Bhagavata Purana, 1948 AD). This approach to design manuscript must have the definite reason and the study do supports the reason. With this minimalistic designs, the focused approach and the requirement of the assignment undertaken, ultimately manuscript designers avoided unwanted design elements in their page layouts as they are evident in the manuscripts of other cultures e.g. Jaina manuscripts. Design approaches can be associated with their traditional, aesthetic, cultural, habitual and functional demand, instead of economical factors or rigidity as suggested by the scholars in the previous work.

One significant reasoning discovered in the study related to the untidy look. It is the result of overlapping image borders and text in the seventeenth century Devanagari Brahmanical manuscripts. The reason in the selection of the basic grid construction method; the system of grid construction in the manuscripts did not provide a gutter space or white space in between two modular units. Both the manuscript scribe and the
illustrator have followed the same demarcation line for their area of work. As there was no padding space, it resulted in overlapping effect. This problem is overcome in the modern publication designs by the introduction of columns with gutter space in the page layout. Gutter space works as padding space or white space between text and visuals, and eventually this composition technique results in a grouping of information and uncluttered, organized look in the page layout.

Page turning system, the orientation of the text on the page, page navigation system, limited use of colour palette in the page layout, standardization of colour gives, and the introduction of white space in order to distinguish different type of information in visual groups reveal the manuscript designers’ clear understanding of the user requirements while reading the manuscript. This system has enhanced the effectiveness and efficiency while reading the manuscripts.

The study has explored the nature of practice of fundamentals of design in the page layouts of the seventeenth century Devanagari Brahmanical manuscripts. The findings validate that many design principles such as consistency, repetition, proportion, scale, contrast, harmony, balance, visual hierarchy, emphasis, order and tension were utilized in the manuscript page layouts along with the design elements such as line, colour, white space, etc. As a result, it built an interest in the pages by pulling up the visual hierarchy, visual order, a grouping of information, etc.

- Space organization using grid structure has helped to create the template. The template maintained consistency in the structure of a page as well as in the entire manuscript. The page navigations system is repeated on all pages consistently. Consistency is also maintained in the typography to demonstrate the level of information.
- Tension is created in the layout by adding vertical borderlines in the left and right margin area; it restricts the readers’ eye movement in the horizontal direction and eventually the reader moves to the next line.
- Visual hierarchy is achieved by adding colour or scaling in the size and the proportion of the element. For example, the main text in the ‘tripatha’ style is bigger and bold than the commentary text. By rubricating, certain text aid in the emphasizing of the certain elements. By maintaining the consistency in such elements, it supports reader’s visual memory.
• Thoughtful use of extra white space between two types of information e.g. between two verses, or stanzas, in the beginning of chapter or end of the chapter, facilitated forming visual groups and support effortless reading by resting eyes in the text based page layouts.

• Formal balance in a page layout is achieved mainly by the justified type of text alignment and positioning the other elements in a design such as margin lines, running titles and folio numbers. The introduction of drop line alignment in ‘tripatha’ style page layout has added visual movement in the design. Application of colour, contrast in tonal values in the text, has further added excitement to the page layout.

All these processes and techniques along with fundamentals of design transformed the seventeenth century Devanagari Brahmanical manuscripts aesthetically pleasing. They are user-friendly, utility oriented and functional. All above-mentioned evidence support the hypothesis, manuscript designers employed design principles for the composition of page layout designs.

The study has explored the continuation of page layout formats and various aspects in modern publication design. These formats are practiced in single column text mainly in novel and Devanagari Brahmanical modern publication designs. Modular unit based text is observed in the poetical genre modern publication designs.

The study has revealed that in the modern Devanagari Brahmanical publication designs a commonly practiced format based upon the seventeenth-century manuscripts is a page layout with landscape orientation and the verses composed in a horizontal manner with inline verse number. The page navigation system is arranged in the left and right margins and borderlines occasionally enhanced with geometrical or floral patterns. Although the standard in writing Devanagari script is given serious attention by the government authority, the punctuation marks (danda), and diacritic mark system remained unchanged in the Devanagari Brahminical text. The continuation of the formats have been adapted with modern design principles, e.g. the use of visual contrast, proportion, colour to show visual hierarchy among the levels of information. The continuation of page layouts format shows readers cultural connection.

Although most findings are generally compatible with the design concepts of the seventeenth century Devanagari Brahmanical manuscripts and the modern publications designs, however they differ in several areas. Comparative study has revealed that the
seventeenth century Devanagari Brahmanical manuscripts page layouts deficient in columns, pages with spreads (recto and verso), asymmetrical balance in the layout, stitching or gluing type of binding systems as provided in modern publication designs. However, the use of captions, title, footnotes, visual hierarchy, and the dynamic arrangement of text in various types of fonts and various type of grids makes entire contemporary page layout arrangement logical.

While comparing modern publication designs with the seventeenth century Devanagari Brahmanical manuscripts, many advanced forms of design features are noticed in the modern publication designs.

Seventeenth century Devanagari Brahmanical manuscripts have necessary visual and aesthetic qualities in consideration with social, political and technological aspects of the seventeenth century. They have continuity and have a link between the past and the present.

These three major themes have formed the basis of the six hypotheses of the study. The conclusion of the study asserts the validation of six hypotheses.